

FROM:

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10 July

	TO	INITIALS	DATE
DIR	<i>1</i>		<i>7/10</i>
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REMARKS

*PID received
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File: Photography 3

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TRANSMITTAL SLIP

8 July 1964

TO:

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EXTENSION

FORM NO. 241

REPLACES FORM 36-8

GPO : 1957—O—439445

(47)

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DD/S&T-1946-64

8 July 1964

MEMORANDUM FOR: Assistant Director for Science and Technology
U. S. Arms Control and Disarmament Agency

ATTENTION: Mr. Edward M. Risley

SUBJECT: Project Band Report, E-429P2.

1. The subject report has been reviewed and our comments are as follows:

a. Significantly more of the text should be devoted to the limitations of satellite reconnaissance and to explaining why any comprehensive inspection system must include other inspection techniques.

b. The statement on page v that satellites "... do not constitute an objectionable presence on national territory, such as might be caused by ground or aerial inspectors." appears to be inconsistent with the statement on page vii that "For any comprehensive inspection system, of course, satellites must be supplemented by other inspection capabilities."

c. Our PI's note that, while the presence of a large aircraft could be detected with 20-40 ft. resolutions (page 7), it could not be distinguished from a transport or as to model (B-52, B-47, etc.). Hangars and runways would be indistinguishable from commercial facilities. Furthermore, missile dimensions listed on page 9 are overall lengths and are not pertinent to recognizable characteristics. Because an ICBM is 100 feet long does not mean that it may be identified as an ICBM on photography with 20-40 foot resolutions. Experience has shown that it can't.

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SUBJECT: Project Rand Report, R-429PR.

2. We note that about 6 times better resolution is required to identify an object for what it is than is required to detect the presence of something unknown. Resolutions of 20-40 feet will not allow even detection of any military equipment unless its use results in extensive ground scaring. In the case of naval vessels, these resolutions would permit only gross identification (i. e. subs or destroyers).

3. The degraded photographs used in the Rand report were produced by defocusing the enlarger. This is not a realistic method of degrading photography to simulate satellite product. Copies of three photographs at one, 14 and 28 foot ground resolutions, extracted from the Perkin-Elmer ground resolution study are attached for comparison. The originals from which these were made have been precisely degraded by laboratory techniques to simulate grain structure as well as the modulation transfer of satellite photos.

4. Perhaps the cover sheet of the report should note that this study was requested by ACDA, in conformity with page iii.

5. As you can see, we have technical reservations regarding this report quite apart from the questions which naturally arise about the Cuban references and whether the report will, in fact, serve the purposes for which it was designed. We are willing to discuss these technical reservations at length and with examples, both operational and analytical, drawn from our experience. We are convinced, however, that if the project is pursued further a major rewrite would be in order to insure that the impression of system capabilities which it creates is realistic.

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SUBJECT: Project Rand Report, R-429PR.

6. In any case, you should be aware that our review necessarily has been cursory. A detailed technical critique may be in order, but would be highly classified and would be voluminous and time-consuming.

SIGNED

[Redacted]
Chief, Action Staff
Directorate of Science and Technology

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Attachments:
As Stated

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